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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,904	01/29/2004	Markus Mengel	Q79656	2613

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SUITE 800  
WASHINGTON, DC 20037

EXAMINER
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TURNER, SAMUEL A

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/765,904

Applicant(s)

MENGEL, MARKUS

Examiner

Samuel A. Turner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/628,431.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/29/04, 8/16/04</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Abstract*

The abstract of the disclosure is objected to because the abstract must be limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

### *Drawings*

The drawings were received on 16 August 2006. These drawings are accepted by the examiner.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 2-6, 7/2-6, and 8-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely analyzing, calculating, determining, selecting, etc. would not appear to be sufficient to

constitute a tangible result, since the outcome of the analyzing, calculating, determining, selecting, etc. step has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible.

Claim 2 ends with the limitation "a spatially resolved Stokes vector is determined on the basis of the measurement results" which is neither a physical transformation or a useful, concrete and tangible result because the Stokes vector has not been claimed in a disclosed practical application nor claimed in such a manner that its usefulness in a disclosed practical application can be realized. In claim 1, the step of "spatially resolved detection" can be interpreted as a physical transformation since the beam is transformed into an electrical signal.

*Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-15 are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into

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English from a foreign document and are replete with grammatical and idiomatic errors. This includes the use of wherein clauses instead of positively defined steps.

In claim 1, the term "serially" is indefinite. The term fails to define whether the elements claimed are all in the beam path or whether each element is sequentially placed in the beam path. The number of radiation sources claimed is confusing. Both an "associated radiation source" and a "pulsed radiation source" are claimed. The use of reference characters is considered as having no effect on the scope of the claims, see 608.01(m). Claims 2-10 are dependent on claim 1 and therefor are also included in the rejection.

In claim 3 the variable "b" has no antecedent basis and appears to be a typo for the variable " $\beta$ ". Further, there is no antecedent basis for "the phase angle pairs ( $\alpha$ ,  $\beta$ )". These variables appear to refer to "the different phase angles of the two modulation oscillations" but in the specification the different phase angles are designated  $\alpha_1$  and  $\alpha_2$ . Claims 4, 7/3-4, and 8-10 are dependent on claim 3 and therefor are also included in the rejection.

Claim 7 is confusing in that there is no defined relationship between the steps of claim 1 and the introduction of the imaging beam pencil. Claims 8-10 dependent on claim 7 and therefor are also included in the rejection.

In claim 10 the position of the two photoelastic modulators is confusing. The two photoelastic modulators could be the same modulator or

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the two photoelastic modulators could be on opposite sides of the convergence point.

With regard to claim 11, the phrase "can be positioned serially" is indefinite because it fails to define any positive limitation as to presence of one or both of the second photoelastic modulator or polarization element in the beam path. The limitation is considered indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Claims 12-15 are dependent on claim 11 and therefor are also included in the rejection.

In claim 12, the term "it" does not adequately refer the previously claimed structure.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-13 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Schoeffler et al(5,841,538).

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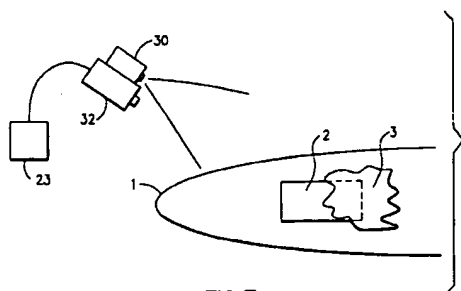


FIG. 7

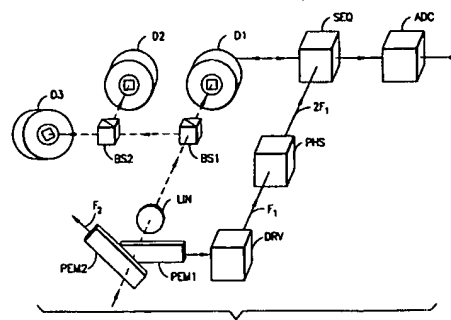


FIG. 9

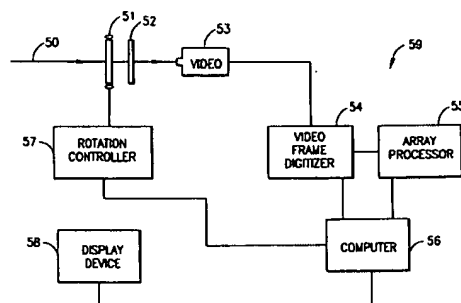


FIG. 10

With regard to claim 11, Schoeffler et al teach an apparatus for the spatially resolved polarimetric examination of an imaging beam pencil (Fig. 9) having: a pulsed radiation source (Fig. 7, 30); a first photoelastic modulator (Fig. 9, PEM1); a second photoelastic modulator (Fig. 9, PEM2); a polarization element (Fig. 9, LIN); a control unit (Fig. 9; DRV, PHS, SEQ); and a detector (Fig. 9, D1-D3).

As to claim 12, an evaluation unit (Fig. 10, 56); is provided.

As to claim 13, a sample system (Fig. 7, 3).

The remaining claim limitations found in claims 11-13 are functional limitations and these limitations can be met by the prior art if the structure of the prior art is capable of performing the claimed functions. For functional

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language to limit an apparatus claim the limitation must be claimed using a "means-plus-function" format of 35 U.S.C. § 112, sixth paragraph.

*2114 [R-1] Apparatus and Article Claims — Functional Language*

**APPARATUS CLAIMS MUST BE STRUCTURALLY DISTINGUISHABLE  
FROM THE PRIOR ART**

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. In re Schreiber, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997) (The absence of a disclosure in a prior art reference relating to function did not defeat the Board's finding of anticipation of claimed apparatus because the limitations at issue were found to be inherent in the prior art reference); see also In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoeffler et al(5,841,538) in view of Wang(6,985,227).



Wang teaches inspecting the sample system is an optical imaging system which can be microlithography projection objective(column 1, line 63-column 2, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made replace the sample in Schoeffler et al with an optical imaging system especially a microlithography projection objective.

The motivation for this modification is found in Wang which teaches the need for spatially resolved polarimetric examination(birefringence) of microlithography projection objectives.

*Allowable Subject Matter*

Claims 1-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, and 35 U.S.C. § 101 set forth in this Office action.

With regard to claim 1, the prior art of record fails to teach the limitations of using a pulsed radiation source, and driving of the source to output a radiation pulse in a manner dependent on the oscillation state of at least one of the first and second photoelastic modulators in combination with the remaining limitations of claim 1.

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*Relevant Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Bjork et al(4,6472,07), see column 6, lines 1-14; and Oldenbourg et al(5,521,705), see figures 2, 3, and 5.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose phone number is 571-272-2432.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached on 571-272-2800 ext. 77.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Samuel A. Turner  
Primary Examiner  
Art Unit 2877